AVFoundation and You

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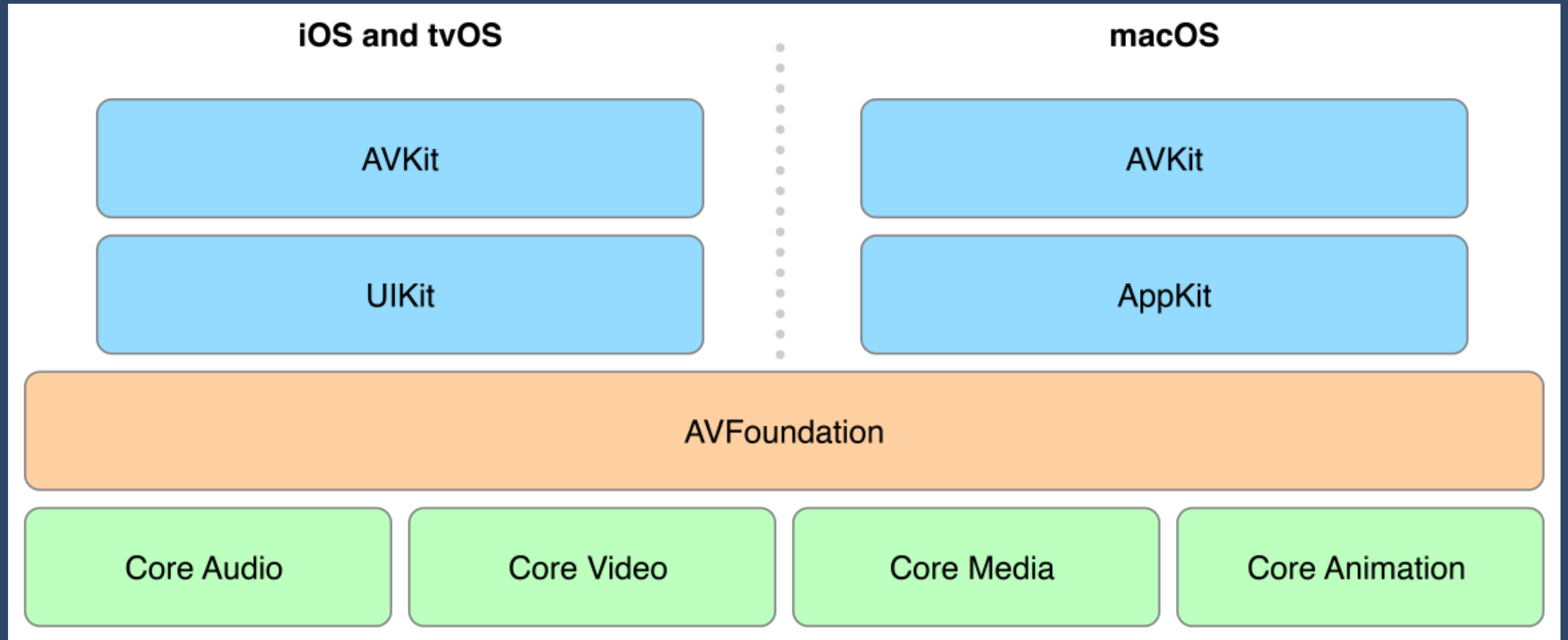
@jaylyerly

What is AVFoundation?

AV Foundation is the full featured framework for working with time-based audiovisual media on iOS, macOS, watchOS and tvOS.
— developer.apple.com

AVFoundation

iOS and tvOS | macOS

AVKit   AVKit

UIKit   AppKit

AVFoundation

Core Audio   Core Video   Core Media   Core Animation

Things We Skip

- Thumbnails

- Temporal editing (Final Cut Pro, etc)

- Reencoding

- Audio APIs

- AirPlay

- Speech Synthesis

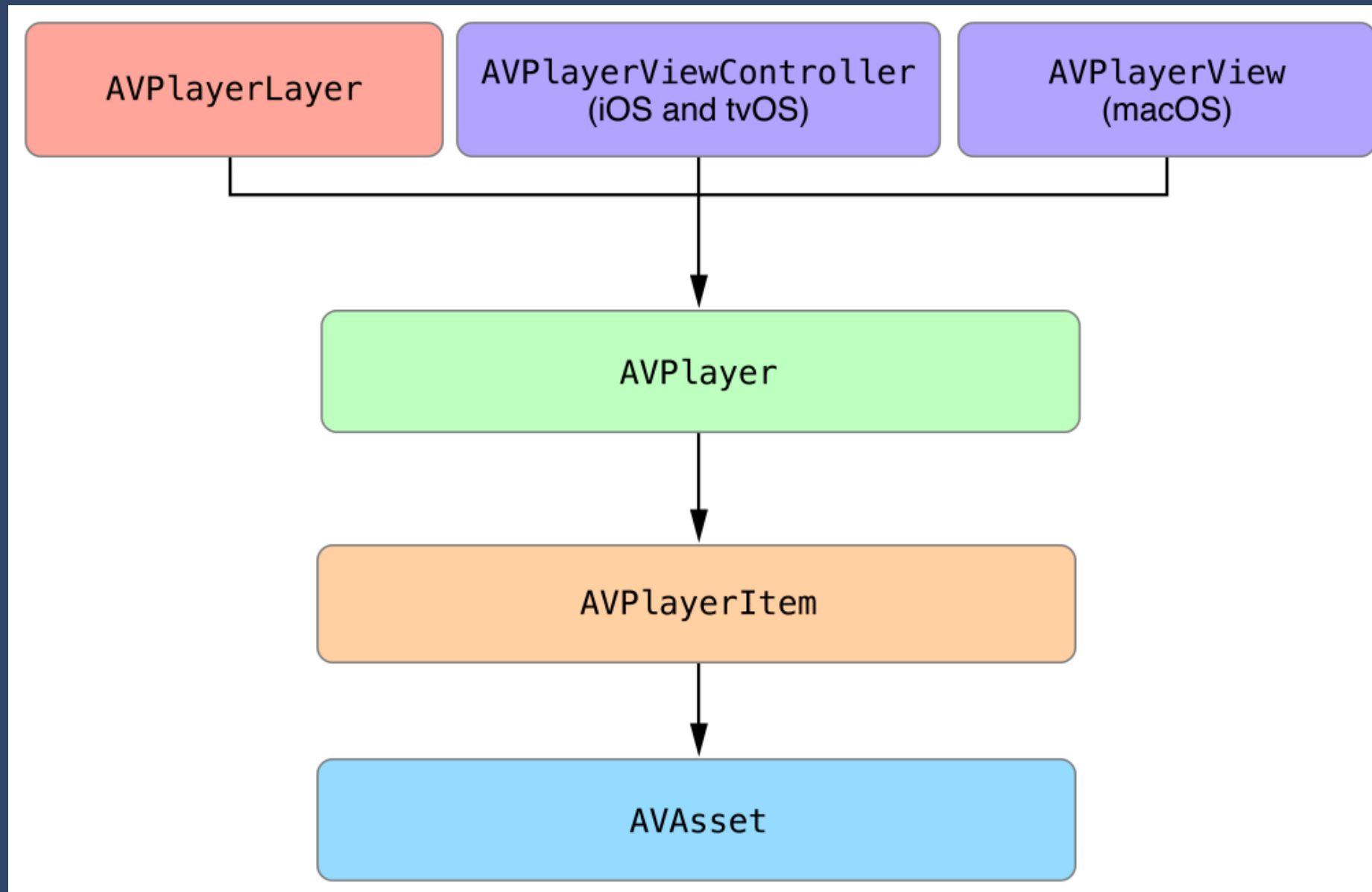# The Important Stuff

📺 Playing Video 📺
🎥 Recording Video 🎥

📺 **Playing Video** 📺
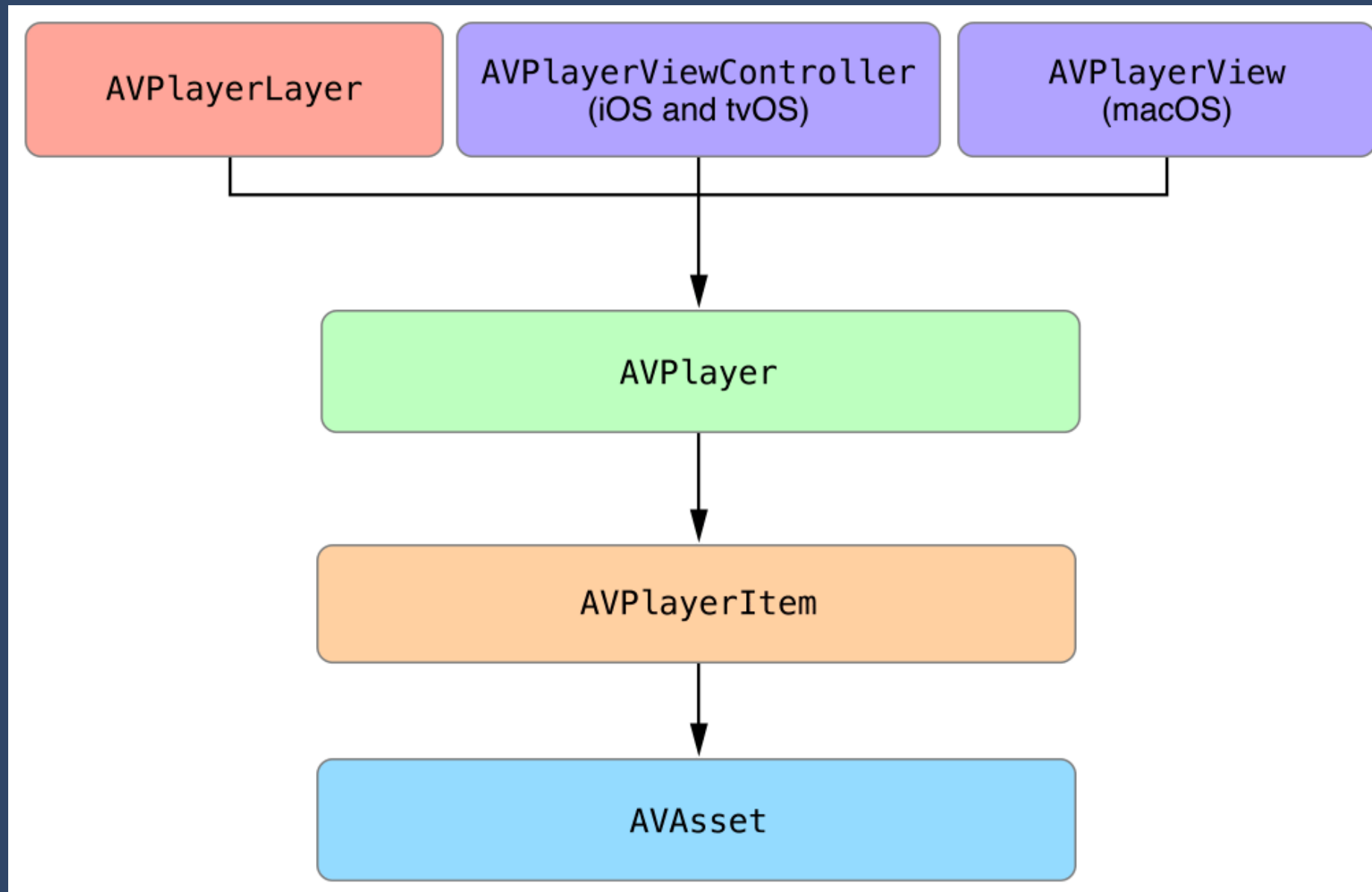
AVKit / AVFoundation

Demo 1 - Off the Rack

- 5 minutes to video playback

Demo 2 - Add Some *Style*

- Add custom controls

- Keep AVPlayerView/ViewController

  - AirPlay

  - PiP (iOS)

  - Media Trimming (macOS)
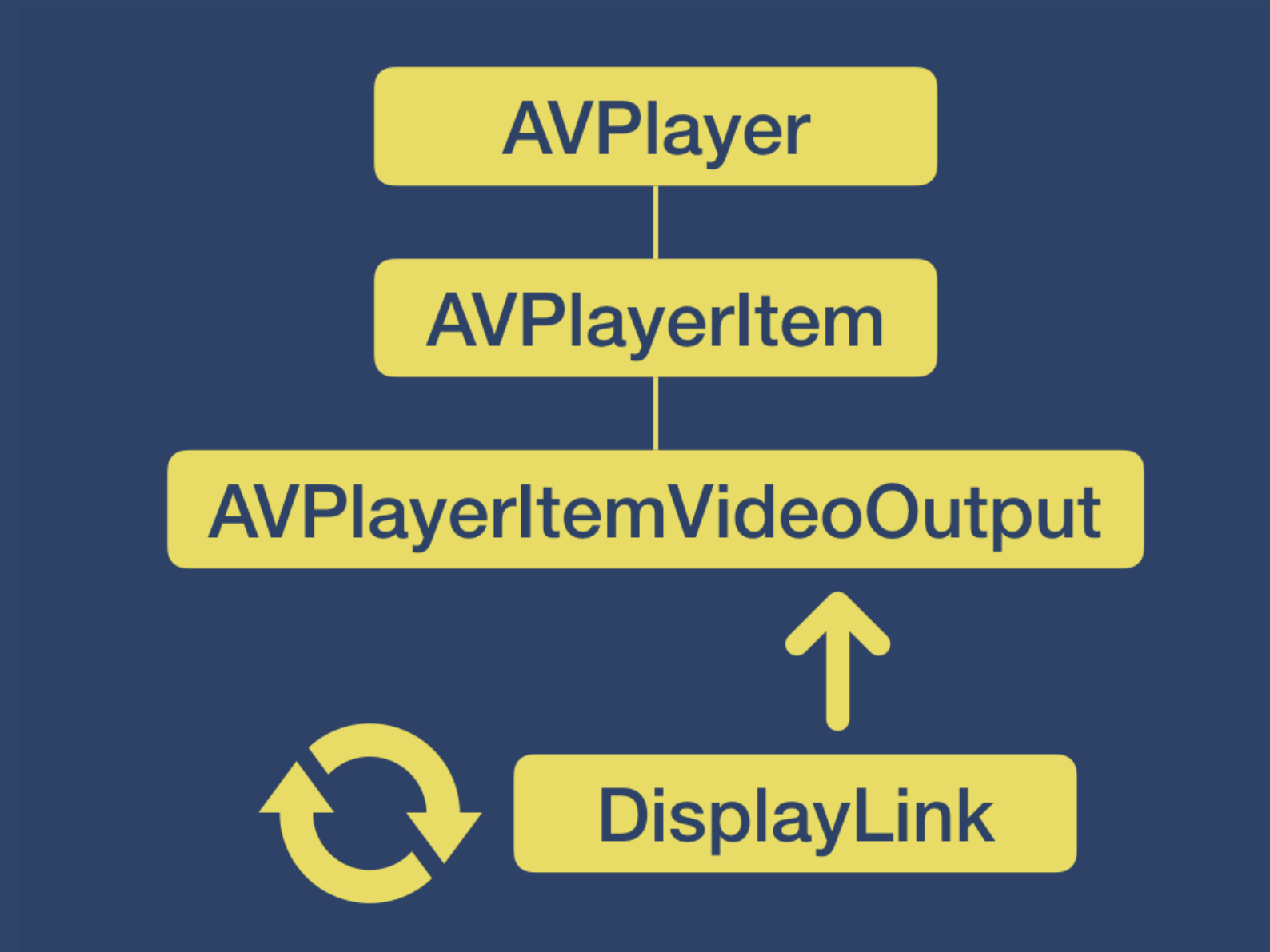
  - Content Proposals

  - Interstitials

Demo 3 - Full *DIY*

Demo 3 - Full *DIY*

- Drop AVPlayerView

- Harvest pixel data from AVPlayer

  - Driven by DisplayLink

- Display with Metal

Demo 3 - Full *DIY*

Demo 3 - Full *DIY*
Why Core Image?

- Easy to work with

  - Easy to combine or filter

    - Visual effects

    - Analysis

  - High performance

  - Cross platform

  - Easy to record

Background Reading - AVAssetReader

```swift
let asset = AVAsset(url: assetUrl)
let videoTrack = asset.tracks(withMediaType: AVMediaTypeVideo).last
let videoOutput = AVAssetReaderTrackOutput(track: videoTrack, ....)

let reader = AVAssetReader(asset: asset)
reader.add(videoOutput)
reader.startReading()

while reader.status == .reading {
    autoreleasepool {
        if let sampleBuffer = videoOutput.copyNextSampleBuffer() {
            // do something with sample buffer
        }
    }
}
```

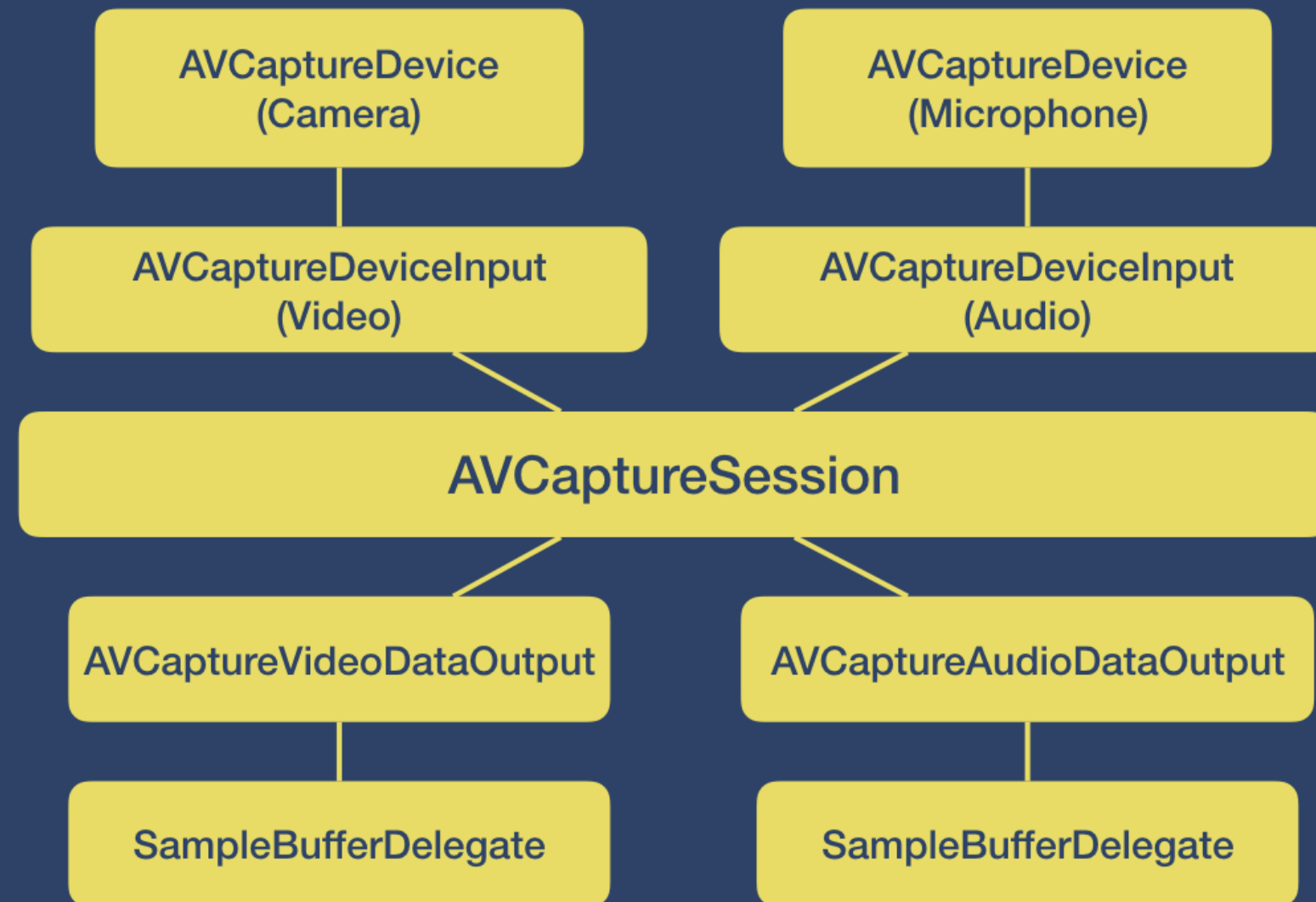# 🎥 Recording Video 🎥

Demo 5 - My First Recorder
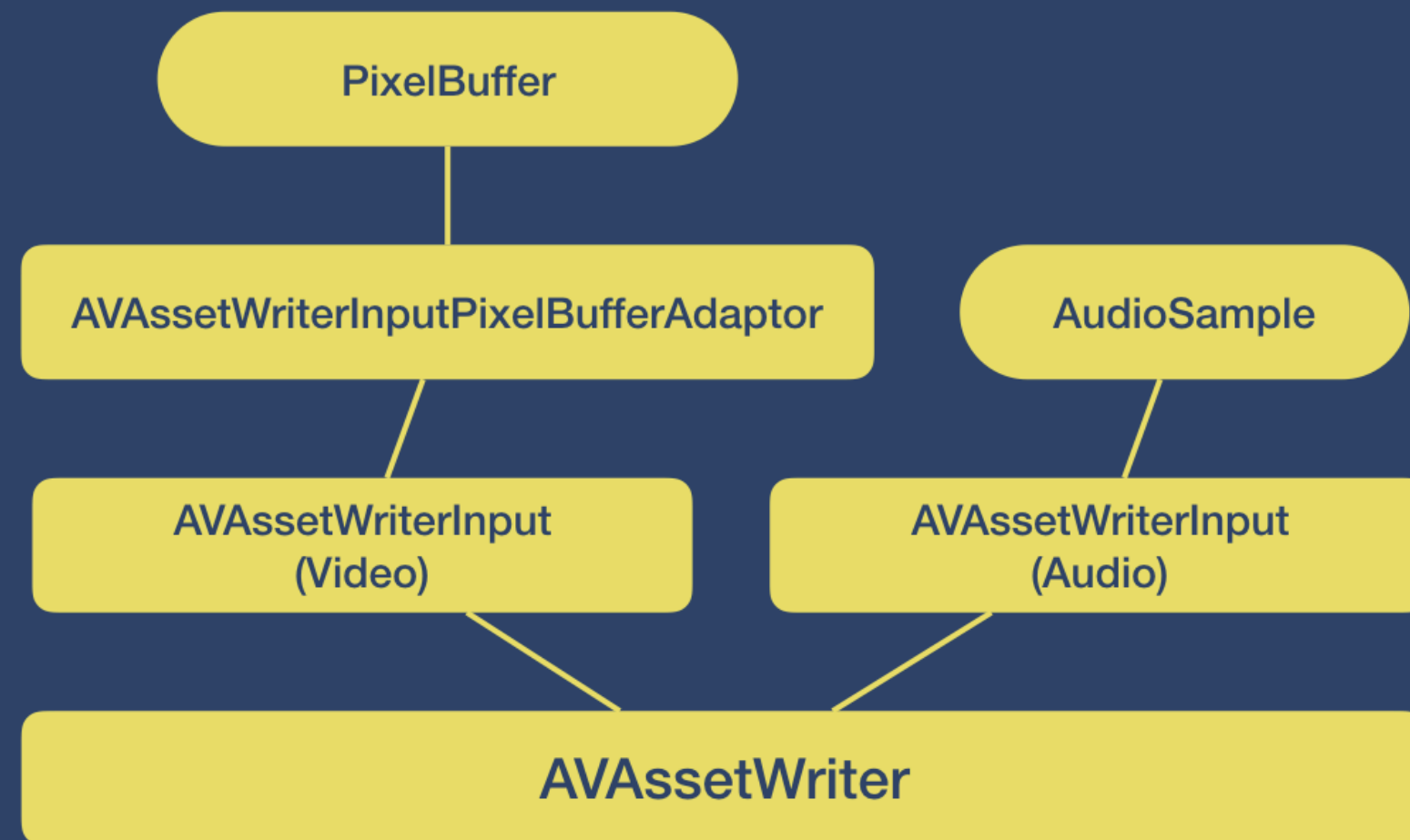
AVCaptureView (macOS)

Demo 4 - The Quickening

- CaptureController

  - Coordinate capture from an AVCaptureDevice

  - Deliver a CIImage

- RecordController

  - Create a movie file

  - Receive CIImage to append as movie frames

Demo 4 - CaptureController
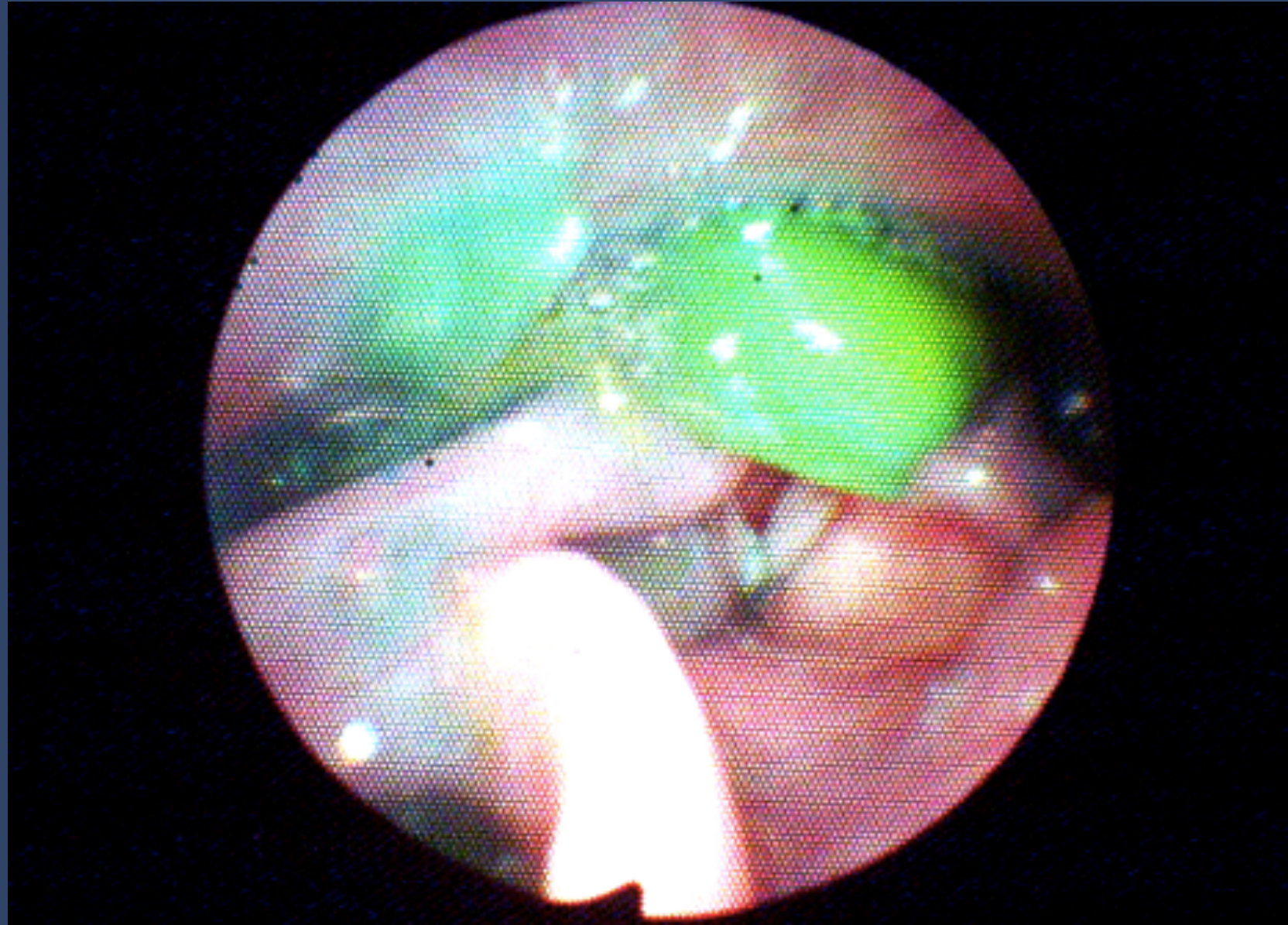
Demo 4 - RecordController

NDŌHD

FEES
Fiberoptic Endoscopic Evaluation of Swallowing

NDŌHD

NDŌHD

Demo

AVFoundation and You

github.com/jaylyerly/AVFoundation

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